CALIFORNIA
BAY-DELTA
AUTHORITY

650 Capitol Mall, 5th Floor
Sacramento, CA 95814
916.445.5511 FAX 916.445.7297
http://calwater.ca.gov

Agenda Item: 10-4
Meeting Date: February 9 and 10, 2005

JOINT MEETING WITH BAY-DELTA PUBLIC ADVISORY COMMITTEE

BATTLE CREEK SALMON AND STEELHEAD RESTORATION PROJECT

Summary: This report provides information on the Battle Creek Salmon and Steelhead Restoration Project including the recent release of revised environmental documents for public comment. A funding decision for this project is scheduled to come before the Authority in August 2005.

Recommended Action: This is an information item only. No action will be taken.

Background

Declines in anadromous fish populations in the upper Sacramento River watershed have led to listing of winter-run and spring-run Chinook salmon and steelhead under both the Federal and State endangered species acts. Battle Creek, located at the southern end of the Cascades in northern California near Red Bluff (Figure ES-1 as Attachment 1), offers an extraordinary opportunity to restore habitat for these fish because of its geology and hydrology. Restoring habitat for these species will contribute to their recovery. Recovering these species can help ease diversion restrictions and preclude more stringent export restrictions in the future, thereby improving the reliability of Bay-Delta water supplies.

The geology of the Battle Creek watershed is primarily volcanic in nature. Seasonal precipitation does not rapidly run off the watershed as with streams to the south in the Sierra Nevada. Rain and snowmelt percolate through the underlying volcanic strata and emerge throughout the watercourse as cold springs. These springs ensure a high and stable base flow throughout the year resulting in the creeks unique hydrology.

Because of its geology and hydrology, Battle Creek offers habitat conditions similar to those found on the Sacramento River upstream of Shasta Dam, habitat that historically supported these listed species. The stable base flow and cold water temperature offer drought resistance rarely found in the present range of salmon and steelhead, suggesting that Battle Creek could be valuable refuge habitat in extreme drought years. Battle Creek provides the only remaining accessible habitat, other than the Sacramento River itself, which may be suitable for winter-run salmon. Because water temperatures in the Sacramento River below Shasta Dam are expected to be unsuitable for winter-run during extreme drought years, Battle Creek may provide their only refuge at those critical times.

The Battle Creek Restoration Project would result in re-opening more than 40 miles of historic salmon and steelhead habitat. The exceptional drought resistant nature of Battle Creek will make its fish populations extremely valuable in the years following a catastrophic drought when the entire basin's populations must rebuild.

The constant high flow of Battle Creek also makes it a prime stream for hydroelectric development. As pictured on the attached graphic (Figure 3-1 as Attachment 2), Pacific Gas and Electric Company owns and maintains the Battle Creek Hydroelectric Project (total capacity 36,056 kW). The configuration and historic operation of the hydroelectric project limits the potential of Battle Creek to support salmon and steelhead.

In recognition of the importance of restoring Battle Creek, the National Marine Fisheries Service, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, California Department of Fish and Game, and PG&E signed a detailed Memorandum of Understanding (MOU) in 1999 that defined their roles and made commitments regarding costs for and implementation of the Battle Creek Salmon and Steelhead Restoration Project.

Components of the Restoration Project (Figure ES-2 as Attachment 3) as described in the MOU include:

- Removal of 5 diversion dams
- Laddering 3 diversion dams and screening their associated diversions
- Increasing flow releases from all remaining diversion dams affecting anadromous fish on Battle Creek
- Constructing powerhouse tailrace connectors to eliminate redundant screening requirements and mixing North and South Fork waters

The primary goal of the Restoration Project is to restore and enhance about 42 miles of salmon and steelhead habitat in Battle Creek and an additional 6 miles of habitat in its tributaries while minimizing the loss of renewable energy produced by the Battle Creek Hydroelectric Project. The Battle Creek Salmon and Steelhead Restoration Project was funded through the CALFED Ecosystem Restoration Program early implementation efforts in 1999 for $28 million from Federal Bay-Delta Act funds.

Subsequent planning and design work has resulted in revised cost estimates and timelines with costs at about three times original estimates. The purpose of this staff report is to update the Authority and BDPAC on the status of the project and highlight the release of revised environmental documents for public comment.

Public Review

A Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Battle Creek Restoration Project was developed in July 2003. Based on public comments, parts of that document were further analyzed. A Draft Supplemental EIS/Revised EIR is expected to be distributed in early February for a 60-day public review. The lead agencies will then respond to comments and are expected to recommend a project and complete a Final EIS/EIR in July, 2005. This process has included analysis of alternatives for the project in coordination with the stakeholders. This included extensive discussion at the BDPAC Ecosystem Restoration subcommittee among the CALFED agencies, PG&E, and the California Hydropower Reform Coalition comparing the long-term costs and benefits of the preferred alternative described in the DEIS/R (i.e., removing 5 dams, consistent w/ the 1999 MOU) versus an 8 dam removal alternative advocated by some in the environmental community.

Future Funding Decision

The Bureau of Reclamation with the cooperating project agencies applied through the Ecosystem Restoration Program for the additional funds needed to complete the restoration project first in 2001. A proposal request was submitted in 2002 and has undergone extensive technical review coordinated by the California Bay-Delta Authority staff. The ERP Selection Panel, which is comprised of technical and resource-management experts covering a broad range of expertise, recommended that the applicants continue to revise their proposal in response to technical comments. The Battle Creek project team is responding to the technical input in their revised proposal. The current estimate for additional funds is at least $54 million with a few issues remaining to be resolved.

In addition, a number of other projects are occurring in the Battle Creek watershed. Already funded activities include watershed planning in the upper watershed and purchase of easements along the creek. Actions requiring additional funding include modifications of the barrier weir at the Coleman National Fish Hatchery and screening of the water intakes at the hatchery. These projects will be presented to the Authority in the future.

List of Attachments

(Figures are from the Battle Creek Salmon and Steelhead Restoration Project Draft EIS/EIR July 2003)

Figure ES - 1 -- Location of Battle Creek
Figure 3-1 -- Graphic of Existing Conditions on Battle Creek (No Action Alternative)
Figure ES - 2 -- Graphic of MOU Restoration Project Facilities and Limits

Contact

Dan Castleberry Phone: 916-445-0769
Deputy Director for Ecosystem Restoration

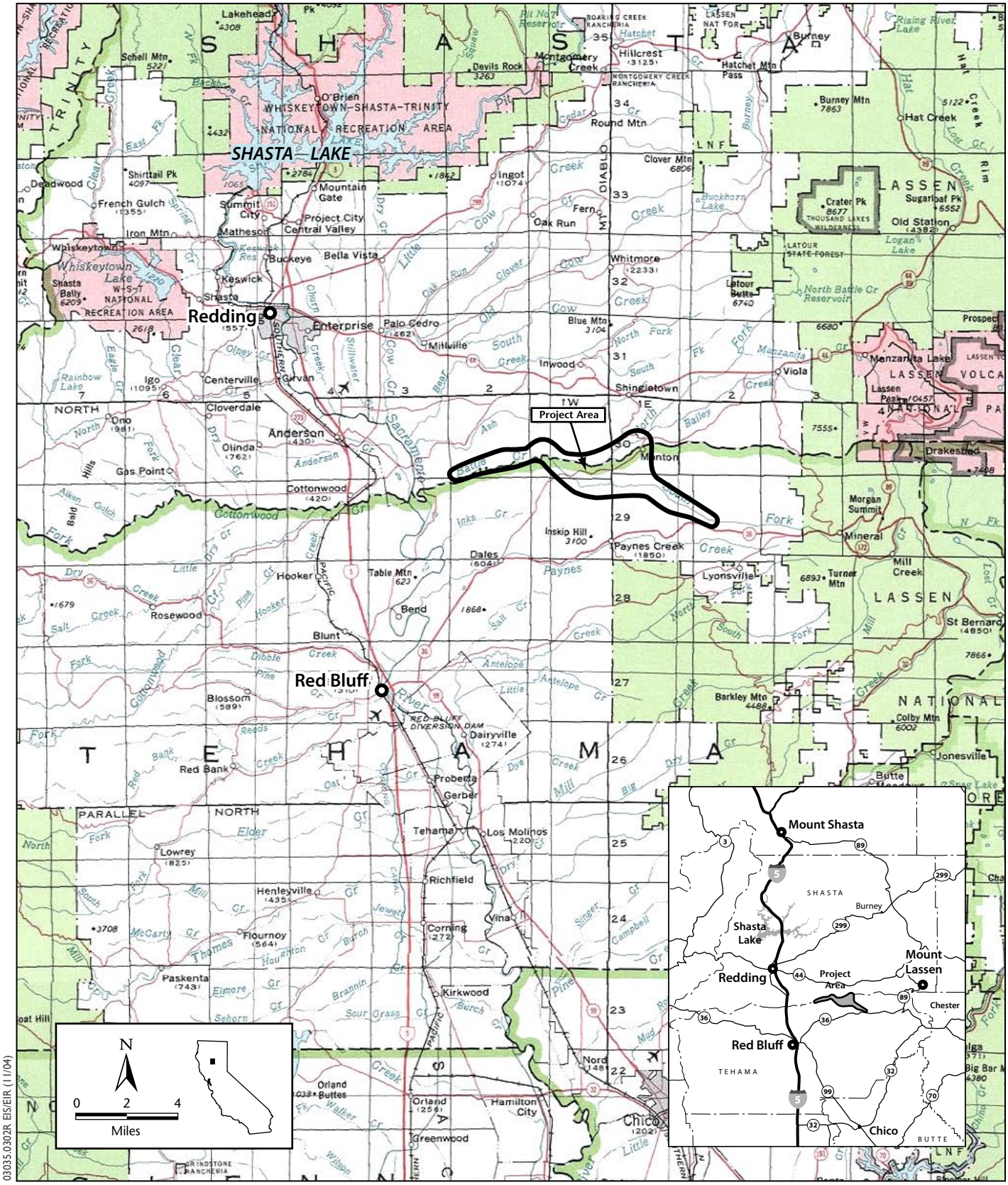
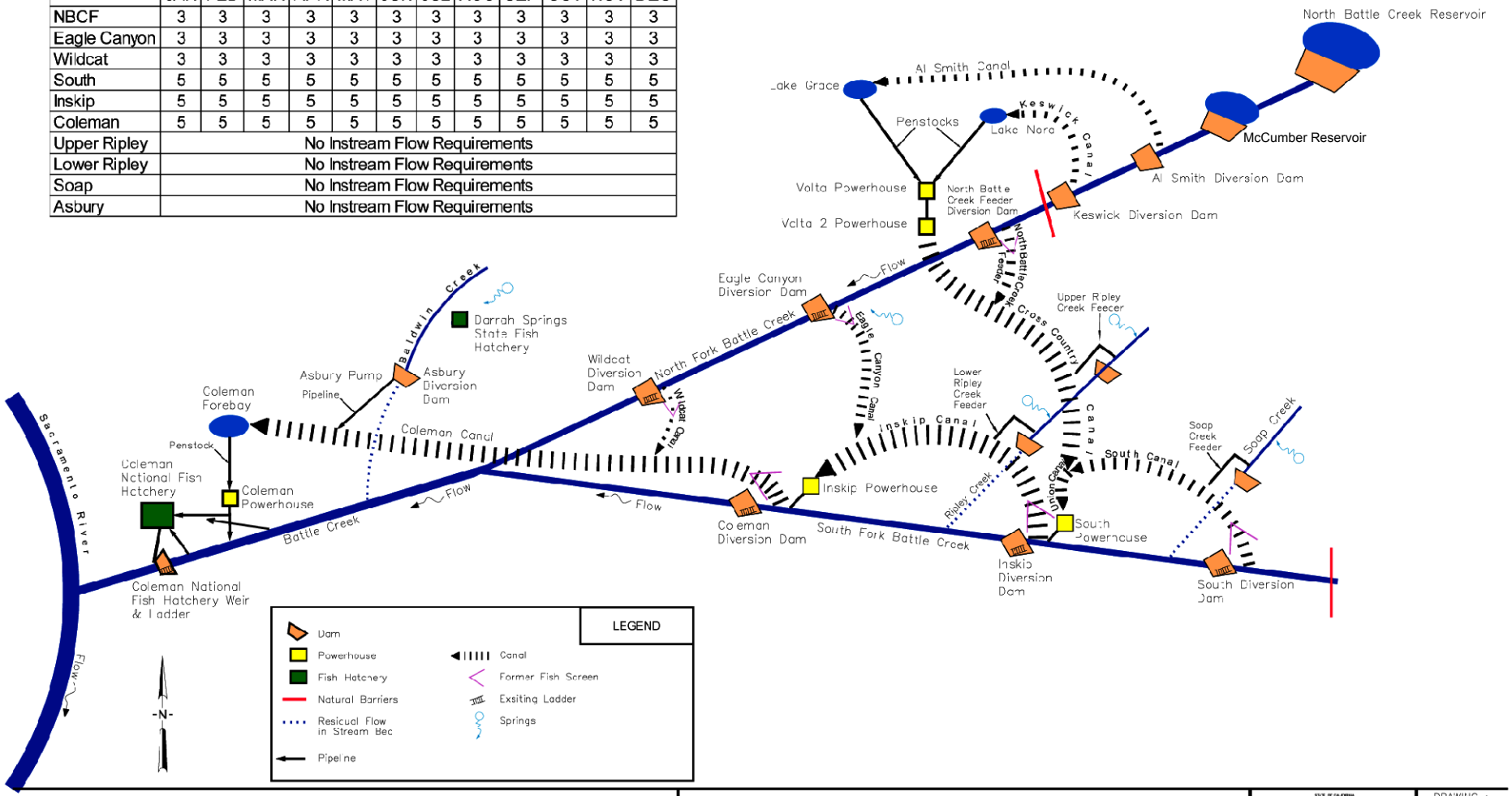


Figure ES-1
Location of the Battle Creek Salmon and Steelhead Restoration Project

DAM	MONTHLY MINIMUM FLOW RELEASE (cfs)											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NBCF	3	3	3	3	3	3	3	3	3	3	3	3
Eagle Canyon	3	3	3	3	3	3	3	3	3	3	3	3
Wildcat	3	3	3	3	3	3	3	3	3	3	3	3
South	5	5	5	5	5	5	5	5	5	5	5	5
Inskip	5	5	5	5	5	5	5	5	5	5	5	5
Coleman	5	5	5	5	5	5	5	5	5	5	5	5
Upper Ripley	No Instream Flow Requirements											
Lower Ripley	No Instream Flow Requirements											
Soap	No Instream Flow Requirements											
Asbury	No Instream Flow Requirements											



BATTLE CREEK SALMON AND STEELHEAD RESTORATION PROJECT
Battle Creek near Manton, California

Battle Creek Schematic

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

Revision Date: June 26, 2001

DRAWING : Battle Crock

Sheet of

03035.03-001

Figure 3-1
No Action Alternative

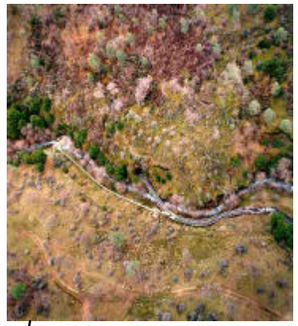
Battle Creek Salmon and Steelhead Restoration Project

Project Area Limits

WILDCAT DIVERSION DAM

EAGLE CANYON DIVERSION DAM

NORTH BATTLE CREEK FEEDER DIVERSION DAM



SOAP CREEK FEEDER DIVERSION DAM

COLEMAN DIVERSION DAM

INSKIP DIVERSION DAM

SOUTH DIVERSION DAM

03035.03-001

Figure ES-2
Restoration Project Facilities and Limits